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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,236	02/01/2002	William Brent Wilson	P21748	8492

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EXAMINER

AN, SHAWN S

ART UNIT PAPER NUMBER

2613

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/060,236	Applicant(s) WILSON, WILLIAM BRENT	
	Examiner Shawn S. An	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-20 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Pre-Brief conference request

1. Applicant's remarks with respect to currently pending claims have been carefully reviewed and considered but are moot in view of the new grounds of rejection incorporating the previously cited prior art references (see below).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-5, 8, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (5,680,482) in view of Tucker et al (5,903,313).

Regarding claims 1, 5, and 21, Liu et al discloses a method of controlling processing requirements of a video decoder that receives and decodes incoming video data, and a system for dynamically processing incoming video data, comprising:

a decoder (Fig. 2, 10) for decoding video data; and
measuring of processing power required to decode bitstream of video data (col. 11, lines 43-56); and
measuring of decoder's processing capability (Fig. 7, 370).

Liu et al does not particularly disclose reducing computational processing of the video data by the decoder based on the throttling amount, comprising reducing an amount of processing performed on the decoded video data prior to displaying a picture, without requiring encoded throttling control data associated with the video data, and a decoder throttler for determining a throttling amount based on the measuring of computational processing power and the measuring of decoder's processing capability of the decoder, wherein the decoder throttler provides the throttling amount to the

decoder, which reduces an amount of processing performed on the decoded video data prior to displaying a picture, in accordance with the throttling amount.

However, Tucket et al teaches reducing (turning off motion compensation) computational processing of the video data by the decoder based on a throttling amount (col. 10, lines 33-51), comprising reducing an amount of processing performed on the decoded video data prior to displaying (125) a picture, without requiring encoded throttling control data associated with the video data, and a decoder throttler (Fig. 4A, 330) for determining a throttling amount based on the measuring of decoder's processing capability of the decoder, wherein the decoder throttler provides the throttling amount to the decoder, which reduces an amount of processing performed on the decoded video data prior to displaying a picture, in accordance with the throttling amount (col. 10, lines 33-51).

Tucket et al also teaches a performance monitor (Fig. 3, 205) located in motion decoder for determining performance capability of the host processor and determining other grades of performance as well or a continuum of performance levels (col. 9, lines 27-39).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing Liu et al's reference to incorporate the concepts as above as taught by Tucker et al so as to reduce computational processing of the video data by the decoder based on the throttling amount prior to displaying a picture of decoded video data, without requiring encoded throttling control data associated with the video data, and the decoder throttler determines a throttling amount based on the measure of computational processing power to decode at least one bitstream of the video data and measures decoder's processing capability, wherein the decoder throttler provides the throttling amount to the decoder, which reduces an amount of processing performed on the decoded video data prior to displaying a picture, in accordance with the throttling amount, so that input bitstreams can be decoded in a way to result in certain visual quality based on the decoder throttling based on measurement of the processing capability of the decoder and measurement of the processing power required to decode the bitstream of the video data.

Regarding claims 4 and 8, Liu et al discloses measuring an indication/type of an amount of processing required for the bitstream (col. 4, lines 22-26).

4. Claims 9-13 and 24-25 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al (5,680,482) in view of Tucker et al (5,903,313), Boyce et al (5,635,985).

Regarding claims 9-10, 12, and 24-25, Liu et al discloses a method of reducing/controlling processing requirements of a video decoder that receives and decodes incoming video data, and a system for dynamically processing incoming video data, comprising:

- a decoder (Fig. 2, 10) for decoding video data;
- measuring of computational processing power required to decode at least one bitstream of video data (Col. 11, lines 43-56); and
- measuring of decoder's processing capability (Fig. 7, 370), wherein the picture comprises the decoded video data (Fig. 2, 18).

Liu et al does not particularly disclose reducing computational processing of the video data by the decoder based on the throttling amount,

- determining a throttling amount using a measure of computational processing power required to decode at least one bitstream of the video data, and a measure of decoder's processing capability, without requiring/receiving encoded throttling control data associated with the video data, and

- a decoder throttler that receives from the decoder a measure of computational processing power required to decode the video data and a measure of processing capability of the decoder, and without receiving encoded throttling control data, and

- determining a throttling amount based on the measuring of computational processing power required to decode at least one bitstream of the video data and the measuring of decoder's processing capability of the decoder,

- wherein the decoder throttler provides the throttling amount to the decoder, which reduces the number of coefficients inverse quantized and inverse DCT transformed

comprises by selectively setting coefficients to alternate values, in accordance with the throttling amount, wherein

reducing a number of coefficients inverse quantized and inverse DCT transformed by an amount based on the measured computational processing and the measured processing capabilities.

However, Tucket et al teaches reducing (turning off motion compensation) computational processing of the video data by the decoder based on a throttling amount (col. 10, lines 33-51), comprising reducing an amount of processing performed on the decoded video data prior to displaying (125) a picture, without requiring encoded throttling control data associated with the video data, and a decoder throttler (Fig. 4A, 330) for determining a throttling amount based on the measuring of decoder's processing capability of the decoder, wherein the decoder throttler provides the throttling amount to the decoder, which reduces an amount of processing performed on the decoded video data prior to displaying a picture, in accordance with the throttling amount (col. 10, lines 33-51).

Tucket et al also teaches a performance monitor (Fig. 3, 205) located in motion decoder for determining performance capability of the host processor and determining other grades of performance as well or a continuum of performance levels (col. 9, lines 27-39).

Furthermore, Boyce et al teaches reducing the number of coefficients inverse quantized and inverse DCT transformed by selectively setting coefficients to alternate values comprising 0 (Fig. 1, 126; col. 10, lines 13-24) in order to make the downstream processing of these coefficients less computationally intensive.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing Liu et al's reference to incorporate the concepts as above as taught by Tucker et al and Boyce et al so as to reduce computational processing of the video data by the decoder based on the throttling amount prior to displaying a picture, without requiring encoded throttling control data associated with the video data, and the decoder throttler determines a throttling amount based on the measuring of decoder's processing capability and the measure of computational processing power required to

decode at least one bitstream of the video data, wherein the decoder throttler provides the throttling amount to the decoder, which reduces an amount of processing performed on the decoded video data prior to displaying a picture, in accordance with the throttling amount, and also to reduce the number of coefficients inverse quantized and inverse DCT transformed by selectively setting coefficients to alternate values and reduce the number of coefficients inverse quantized and inverse DCT transformed by the amount based on the measuring of computational processing and the measuring of processing capability in order to make the downstream processing of these coefficients less computationally intensive so that input bitstreams can be decoded in a way to result in certain visual quality based on the decoder throttling and measurement of the processing capability of the decoder.

Regarding claims 11 and 13, Liu et al discloses measuring an indication/type of an amount of processing required for the bitstream (col. 4, lines 22-26).

5. Claims 2-3, 6-7, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al, and Tucker et al, as applied to claims, 1, 5, and 21 above, respectively, and further in view of Malladi et al. (5,818,532).

Regarding claims 2-3, 6-7, and 22-23, The combination of Liu et al and Tucker et al does not particularly disclose limiting a function of at least one post filter or one format conversion filter.

However, Malladi et al teaches reducing the processing power used for one or more decoder function by limiting decoder function (col. 20, lines 31-36 and lines 44-47) in a predetermined manner to reduce the computational requirements of decoding a bitstream.

Therefore, it would have been obvious to a person of ordinary skill in the relevant art to employing Liu et al's reference to incorporate the concept as above as taught by Malladi et al so as to apply the concept in a conventionally well known post filter or format conversion filter to reduce the computational requirements of decoding a bitstream.

Allowable Subject Matter

6. Claims 14-20 are allowed as previously discussed the last Official action as filed on 6/10/2004.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

8. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SHAWN AN
PRIMARY EXAMINER**

3/09/06